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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,766	11/29/2001	Jang-Kun Song	8071-187T (OPP0101190US)	1747
7590 08/02/2006 F. Chau & Associates, LLC 130 Woodbury Road Woodbury, NY 11797			EXAMINER SHAPIRO, LEONID	
			ART UNIT 2629	PAPER NUMBER
DATE MAILED: 08/02/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	09/995,766		SONG, JANG-KUN	
	Examiner		Art Unit	
	Leonid Shapiro		2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24,26-29 and 31-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 26 and 31 is/are allowed.
- 6) ☒ Claim(s) 24,27-29 and 32-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the newly introduced limitation of independent claims 24 and 29: "upon a switch from a first grey state to a second grey state of each pixel" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

The newly introduced limitations of independent claims 24 and 29: "upon a switch from a first grey state to a second grey state of each pixel" are not described in the specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 24,27-29,32-35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The newly introduced limitations of independent claims 24 and 29: "upon a switch from a first grey state to a second grey state of each pixel" are not described in the specification or shown in the Figures.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 24,29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shin et al. (US Patent No: 6,429,842 B1) in view of Kim et al. (US Patent No. 6,400,424 B1) and Kawachuchi et al. (US Patent No. 6,667,925 B1).

As to claim 24, Shin et al. teaches a method for driving a liquid crystal display (See Fig. 6, items 200, P, T, Col. 3, Lines 3-8), including a plurality of gate lines (See Fig. 6, items G1-Gm, Col. 3, Lines 3-11), a plurality of data lines (See Fig. 6, items D1-Dn, Col. 3, Lines 3-11), a plurality of pixel connected to the plurality of gate lines and the plurality of data lines and arranged in a matrix (See Fig. 6, items P11-Pmn, Col. 3, Lines 10-13), method comprising:

applying a first data voltage of a first polarity to the plurality of data lines (See Figs. 6, 7A, items D1-Dn, Col. 3, Lines 33-45);

providing a first scanning signal for odd pixels in a odd row and even pixels in an even row (See Figs. 6, 7A, items P11-P14 , Col. 3, Lines 33-45);

applying a second data voltage of a second polarity opposite to the first polarity to the plurality of data lines (See Figs. 6, 7B, items D1-Dn, Col. 3, Lines 46-51);
and

providing a second scanning signal for odd pixels in even row and even pixels in an odd row (See Figs. 6, 7B, items P21-P24 , Col. 3, Lines 46-51).

Shin et al. does not show a plurality of common electrode lines extending in the row direction, each of the plurality of common electrode lines placed between the plurality of gate lines.

Shin et al. does not show a top substrate common electrode, a plurality of common electrode lines arranged alternately between the plurality of gate lines.

Kim et al. teaches a top substrate common electrode, a plurality of common electrode lines extending in the row direction, each of the plurality of common electrode lines placed between the plurality of gate lines (See Col. 6, Lines 15-19 and Lines 63-67).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teaching of Kim et al. into Shin et al. system in order to provide a TFT-LCD having enhanced storage capacitance (See Col. 2, Lines 14-15 in the Kim et al. reference).

Shin et al. and Kim et al. do not disclose supplying the common electrode lines with swinging common electrode voltage; and generating an overshoot voltage additionally supplied to the common electrode lines.

Kawaguchi et al. teaches supplying the common electrode lines with swinging common electrode voltage; and generating an overshoot voltage additionally supplied to the common electrode lines (See Fig. 1, 15a-15b, item Vcom, Col. 18, Lines 25-35 and Fig. 3, item COM, Col. 21, Lines 15-33).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teaching of Kawaguchi into Shin et al. and Kim et al. system in order to provide an LCD with quicker response (See Col. 1, Lines 17-20 in the Kawaguchi et al. reference).

As to claim 29, Shin et al. teaches a method for driving a liquid crystal display (See Fig. 6, items 200, P, T, Col. 3, Lines 3-8), including a plurality of gate lines (See Fig. 6, items G1-Gm, Col. 3, Lines 3-11), a plurality of data lines (See Fig. 6, items D1-Dn, Col. 3, Lines 3-11), a plurality of pixel connected to the plurality of gate lines and the plurality of data lines and arranged in a matrix (See Fig. 6, items P11-Pmn, Col. 3, Lines 10-13), method comprising:

applying a first data voltage of a first polarity to the plurality of data lines (See Figs. 6, 7A, items D1-Dn, Col. 3, Lines 33-45);

providing a first scanning signal to the plurality of first pixels in pairs of neighboring rows (See Figs. 6, 7A, items P11-P14 , Col. 3, Lines 33-45);

applying a second data voltage of a second polarity opposite to the first polarity to the plurality of data lines (See Figs. 6, 7B, items D1-Dn, Col. 3, Lines 46-51);
and

providing a second scanning to the plurality of first pixels in pairs of neighboring rows (See Figs. 6, 7B, items P21-P24 , Col. 3, Lines 46-51).

Shin et al. does not show a top substrate common electrode, a plurality of common electrode lines extending in the row direction, each of the plurality of common electrode lines placed between the plurality of gate lines.

Shin et al. does not show a plurality of common electrode lines arranged alternately between the plurality of gate lines.

Kim et al. teaches a top substrate common electrode, a plurality of common electrode lines extending in the row direction, each of the plurality of common electrode lines placed between the plurality of gate lines (See Col. 6, Lines 15-19 and Lines 63-67).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teaching of Kim et al. into Shin et al. system in order to provide a TFT-LCD having enhanced storage capacitance (See Col. 2, Lines 14-15 in the Kim et al. reference).

Shin et al. and Kim et al. do not disclose supplying the common electrode lines with swinging common electrode voltage; and generating an overshoot voltage additionally supplied to the common electrode lines.

Kawaguchi et al. teaches supplying the common electrode lines with swinging common electrode voltage; and generating an overshoot voltage additionally supplied to the common electrode lines (See Fig. 1, 15a-15b, item Vcom, Col. 18, Lines 25-35 and Fig. 3, item COM, Col. 21, Lines 15-33).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teaching of Kawaguchi into Shin et al. and Kim et al. system in order to provide an LCD with quicker response (See Col. 1, Lines 17-20 in the Kawaguchi et al. reference).

5. Claim 27-28, 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawaguchi, Shin et al. and Kim et al. as applied to claims 24,29 above, and further in view of Moon et al. (US Patent No. 6,421,039 B1).

Kawaguchi, Shin et al. and Kim et al. do not disclose the swung common electrode voltage in a predetermined period is a square wave having a period identical or multiple to the image signal.

Moon et al. teaches the swung common electrode voltage in a predetermined period is a square wave having a period identical or multiple to the image signal (See Fig. 14a-14b, 15a-15b, items Vs, Vg, Vcom, in description See Col. 6, Lines 52-58).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teaching of Moon et al. into Kawaguchi, Shin et al. and Kim et al. system in order to provide structure of an LCD that can be driven in an AC mode (See Col. 3, Lines 34-35 in the Moon et al. reference).

Allowable Subject Matter

5. Claims 26 and 31 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Relative to claims 26 and 31, the major difference between the teaching of the prior art of record (Kim et al., Shin et al., Moon et al. and Kawaguchi et al.) and the instant invention is that the said prior art **does not teach** a formula for a swing amplitude of the common electrode voltage.

Response to Amendment

7. Applicant's arguments filed 05.22.06 with respect to claim 24, 27-29, 32-33 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Telephone inquire

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 571-272-7683. The examiner can normally be reached on 8 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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07.27.06



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